Exercise 004.1 - Point in Triangle Application

- Define a triangle:
  - User selects three points.
  - Point and click.
- Define a point:
  - User selects one point.
  - Point and click.
- Render the triangle and point to test.
- Determine if the point is in the triangle or not.
- Render the result: In or Out?
- Allow the scene to be reset:
  - The R key.

Exercise 004.2 - Barycentric Coordinate Calculator

- Define a triangle:
  - User selects three points.
- Define a point:
  - User selects one point.
- Calculate the Barycentric coordinate of the point to find if the point is on the triangle.
- Allow the user to select a new point.
  - Point and click.
- Reset the scene:
  - The R key.

Exercise 004.3 - Separating Axis Theorem

- Allow the user to define two convex polygon shapes.
  - Clicking to define points
  - Render the shapes.
- Use SAT to determine if the two shapes intersect.
  - Report the results to the user.
- Allow the scene to be reset:
  - The R key.